

GUEST EDITORIALUNIVERSITY TEACHING
AND EXPLORATION GEOPHYSICS

Many views exist as to the function of a university. In the writer's opinion a university exists to advance and disseminate pure and applied knowledge; to maintain and refine standards of scholarship; to impart to students a capacity for critical analysis and to preserve intellectual integrity. Within the broad framework of university ideals a necessary (but not sufficient) function of a university is to provide suitable graduates for industry, commerce and the public service.

Given that the university is one of the proper institutions in which to teach an essentially applied subject such as exploration geophysics, a comment should be made on the problems peculiar to a university educator teaching undergraduate and post-graduate exploration geophysics and carrying out research projects in exploration geophysics.

Exploration geophysics is unusual in being both a science and an industry and requiring mastery in the art of applying a suite of physical/mathematical/geological techniques to the solution of geological problems which generally arise from the capricious demands of commerce. An additional handicap in exploration geophysics is the proprietary and confidential nature of the costly raw data and advances in instrumentation and data processing procedures. Unfortunately relatively few results of field data interpretation are published. Furthermore, interpretations more often than not are untested and usually judged on

simple, subjective plausibility criteria. Accordingly exploration geophysics suffers because of the lack of feedback and critical analysis of predictions.

Omitting the chronic fund shortages which are a perennial university problem, the main handicap in Australian university teaching and research in exploration geophysics relates to the shortage of data and instrumentation on which staff and students can work. Universities are ideally suited to the development of data processing and interpretation methods in geophysics and also are ideally suited to the development of exploration instrumentation techniques especially in the hard rock field. Besides financial support from industry, universities need technical assistance in the form of access to data and techniques, the direct acquisition of which is beyond the resources of universities.

The more technical support university exploration geophysics departments can obtain from industry the better will be the quality of graduates entering industry and the more useful to the industry will be the results of research in data processing, interpretation and instrumentation.

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